

One of the most remarkable features of the boy's jaws are the teeth, which form the subject of a special report by Prof. Gaudry.

It will be seen that the work is to an unusual degree exhaustive, and has been performed with an attention to scientific accuracy for which palæontologists cannot be too grateful. The observations are beyond dispute, and the theories advanced are suggestive and worthy of careful consideration. The work furnishes us with the most important collection of data as to the nature and habits of Quaternary Man, since the discoveries in the caverns at Spy. We know that Man, even in the Pleistocene, buried his dead, sometimes on intact foyers, sometimes in holes dug in the floor of the cave, sometimes in rude cists consisting of upright stones supporting horizontal flagstones. Frequently he buried them in beds of ologist iron. In the Barma Grande there is evidence of disposal of the dead by incineration. With the dead were buried such trinkets as necklaces, bracelets and anklets made of perforated teeth, shells, and vertebrae of fish.

As to the people who lived in these caves, we can with considerable confidence correlate them with the Quaternary hunters in the valley of La Vézère, with those whose remains have been found at Laugerie-Basse, Gourdan, Chancelade, and Cro-Magnon. It is probable, however, that the hunters of the Grimaldi Mountains were the earlier.

In conclusion, we can unhesitatingly state that the Grimaldi caves have furnished us with the most complete picture we yet possess of Man's life in Europe during Mid-Quaternary time. WILLIAM WRIGHT.

#### MEDICAL EDUCATION AND SOME OF ITS PROBLEMS.

BY a time-honoured ordinance, the opening of the medical session at the beginning of October is made the occasion for the delivery of inaugural addresses at the various schools of medicine. In London, medical education is in a somewhat transitional stage, and it may be interesting to inquire whether the addresses delivered shed any light on the problems that have to be solved. At the present time in London there is a need for concentration of the preliminary and intermediate studies, chemistry, biology, anatomy, and physiology, taken during the first two years of the curriculum, and until recently taught in every medical school. Now these are scientific subjects, and could more efficiently and less expensively be conducted in fewer centres with better equipped laboratories than has hitherto been the case. In this way it would be possible for some, at least, of the medical schools to devote all their energies and funds to the professional training of the last three years of the curriculum. Various plans have been suggested for effecting this. Some years ago, a scheme for a central institute at South Kensington for teaching the preliminary and intermediate subjects was inaugurated. It was an ambitious scheme requiring some 200,000*l.* for its realisation, and though in theory a good one, is probably not the best practical one for London. London is too large to have a single centre; and University and King's Colleges, and one or two of the medical schools, have definitely decided to continue teaching the preliminary subjects. Moreover, by a recent vote of the Faculty of Medicine of the University of London, the scheme of a Central Institute at South Kensington has been negatived, and the former policy reversed.

Another scheme is actually in being and seems to be working well, and might be extended; this is the drafting of the Westminster Hospital students to King's College, and of the St. George's Hospital

students to University and King's Colleges, for the preliminary and intermediate studies. Speaking of this departure, Dr. Allchin, of Westminster Hospital, in his opening address at King's College, said:—

"When in 1899, after the report of Lord Selborne's Commission on a University for London, the medical demand for a re-constitution of the University took organised and coherent shape, the urgent need that there was for some concentration in medical teaching was always placed among the foremost arguments. The feeling generally among the medical schools at that time—or certainly of the great majority of them—was in favour of some scheme by which certainly the elementary subjects of the curriculum, and to some extent also the intermediate, should be taught at fewer centres, thus leaving the smaller schools at least, on whom the pressure of expenditure was relatively the greatest, free to devote their energies entirely to teaching the later subjects. But so far the University of London has utterly failed to bring about any concentration whatever during the seven years of its re-constituted existence, and, what is almost as serious, it has by the course it has followed converted what was seven years ago a widespread feeling among the metropolitan medical teachers of welcome towards the principle of concentration into one of very considerable hostility towards the principle, and has led to many of the schools resolutely opposing any coalescence. In 1905 a coalescence with regard to preliminary studies was arranged between the Westminster Hospital School and King's College, and has worked satisfactorily. I believe that if the University six or seven years ago, when the medical schools would, for the most part, have welcomed the principle of concentration, had exercised upon the different schools a wise and judicious pressure towards giving effect to this principle, much might have been done in this direction."

Certainly this scheme has much to commend it, and with some financial aid from the University it is difficult to see that an arrangement of this kind would be less efficient than a central institute; it would be far less costly than the latter, and, therefore, more likely to be in working within a reasonable time. The last is an element of some moment, for there can be no doubt that London has suffered by contrast with the splendid laboratories and facilities of the new provincial schools, and students in the London schools have diminished in numbers. Long as the five years' curriculum is for the pockets of those who have to pay the fees, it is none too long for the acquirement of the knowledge required for the pass examinations; in fact, it is the exception for a student to obtain a qualification under about six years. It has therefore been suggested that the curriculum might be lightened by relegating to the school science studies the physics, chemistry, and biology required. This plan commended itself to Sir Douglas Powell in his address at University College. He said:—

"I am myself decidedly of opinion that most, if not all, of the chemistry, biology, and physics required for the ordinary pass examination might, and should be, and in time will be, included in the public-school science studies, and be cleared off before the student enters upon the medical curriculum at all; so that the first two years of the student's time may be given up almost entirely to anatomy and physiology, including some comparative anatomy, so far as it may be illustrative of human anatomy, and some physiological chemistry."

Intimately associated with the question of medical education is that of qualifying examinations. In England, Scotland, and Ireland, there are no fewer than twenty-one bodies which have the power of granting degrees or diplomas qualifying to practise medicine and surgery, and there must of necessity be considerable variations in the standard of, and in the conditions of admission to, these examinations. To bring order out of chaos, the only practicable plan

would be the institution of a State examination, which everyone should be required to pass, irrespective of any degree or diploma he should otherwise obtain, as advocated by Dr. Ewart in his address at St. George's Hospital. The London students have a grievance in that the diploma of the Royal Colleges does not entitle the holder to an M.D. degree, and the University of London degree is comparatively inaccessible to the average student. To meet this difficulty, Dr. Allchin frankly contended that the University should grant a degree in medicine accessible under reasonable conditions to the average man, reserving for those who desired them honours examinations more stringent than the pass ones. Sir Douglas Powell also expressed his regret that the diploma of the Royal Colleges could not be signalised by some more definite designation than it now carries. He would make any further work beyond the requirements for the qualifying examinations more strictly post-graduate work. He says:—

"When a man has qualified in his first two years' subjects by passing the required examination, he would do well to proceed to a six months' or a longer course in those subjects for the higher university degrees, and when he has qualified in the second grade and obtained his licence to practise he may proceed to post-graduate clinical, pathological, or other research for his final examinations in those degrees or for the membership of the Royal College of Physicians or fellowship of the Royal College of Surgeons. A university degree and the higher grades of medicine and surgery should be regarded as something beyond and in a sense outside a qualification to practise—as an academic or other distinction for the attainment of which a man may take as long as he pleases, but for which certainly some additional work in each grade or period of his studies should be required."

There is a parallel to this in the case of veterinary medicine, in which the University degree does not take the place of the diploma of the Royal College of Veterinary Surgeons, as it is not a licence to practise, as was pointed out by Prof. Lander in his address at the Veterinary College.

Post-graduation study and research in medical subjects are essential if the practitioner is to keep abreast of recent advances, if the science of medicine is to advance, and the public health to improve. In London, with its seven millions of inhabitants, the supply of clinical material for teaching and research is unique, but there can be no question that it is not utilised nearly to the full extent. The West London Hospital, the London School of Clinical Medicine, the Polyclinic, and a few hospitals are doing excellent work in post-graduate teaching, but if London is to be, as it ought, a great centre for post-graduation work, there must be more coordination and concentration among the numerous special hospitals. The system which makes our hospitals and medical schools dependent on voluntary support has led to the founding of a number of hospitals for special diseases, widely scattered, and therefore largely unavailable for teaching purposes, draining the general hospitals of the particular cases they admit, and using up public subscriptions which might be better utilised. There can be no doubt, on the score of economy alone, that a combination between many of the special hospitals would be of advantage, a view which has been taken by the King's Fund. The poor-law infirmaries also are almost entirely unutilised, yet contain material of the utmost value for teaching and research. Sir Douglas Powell says:—

"I cannot but think further that some affiliative grouping of the great clinical hospitals about the three university centres would be of great value in point of view of financial economy and strength of teaching. It is very possible,

too, that special hospitals and infirmaries might be more utilised than they now are for clinical teaching material, and especially for post-graduate teaching."

As regards research, the special hospitals, the poor-law infirmaries, and the hospitals of the Metropolitan Asylums Board offer unique opportunities for clinical and pathological investigation, but are almost unutilised in this respect, and the general hospitals are unable to do what could and should be done in this direction owing to lack of funds. Contrast this state of affairs with what obtains, say, in Berlin—the newest hospital, the Virchow Krankenhaus, has 2000 beds for all kinds of cases, its department for infectious diseases, its pathological institute, with scientific staff, and the research Institute for Infectious Diseases is close by and affiliated to it—and it must be admitted that London makes but a poor show.

In the teaching of hygiene and the necessary curriculum for the diploma in public health, concentration again is eminently desirable. At present nearly every medical school retains teachers, and the requisite expensive equipment, in each case for the instruction of but a few students.

#### SCIENCE IN THE EAST.<sup>1</sup>

AMIDST the crowded town life of England, a physical science outside the laboratory seems to be becoming a thing of the past. The ordinary British physicist concerns himself with the eccentricities of radium, the cosmogony of the ion, and other matters which are at present but names of mystery to most people. The work of the Indian Survey carries with it the sense of open air and large areas. It deals with subjects which appeal, in part at least, to the intelligence of the average educated man.

A great magnetic survey has been in progress for some years. Up to the date of the report by Captain R. H. Thomas, observations had been made at 808 stations, and three more seasons, it was hoped, would complete the field work, except in so far as repetitions of observations might prove necessary or extensions into the hills might be found practicable. The main part of the magnetic report deals with the inter-comparison of instruments, but there are also some data as to the diurnal inequalities of declination and horizontal force at several of the fixed observatories erected to assist in the survey work. These inequalities are based on five "quiet" days a month, but the non-cyclic change is not explicitly shown, and there seems no statement as to whether it has been allowed for. The difference between the values for 0 a.m. and 11 p.m. in horizontal force is suspiciously large.

Until the question has been actually investigated, it is unsafe to assume that diurnal inequalities from quiet days are really representative of the ordinary day; the part played by disturbance also varies largely from day to day. Thus, though the inequality data are of much intrinsic interest, it is impossible to say in advance what degree of utility they may possess for survey purposes. From the large differences between the inequalities at the different Indian stations, it is clear that problems of some difficulty will have to be faced when it comes to correcting the field observations for diurnal changes, regular and irregular.

Part ii. gives an account of pendulum observations made by Major G. P. Lennox Conyngham and his

<sup>1</sup> Extracts from narrative reports of officers of the Survey of India for the season 1904-5; prepared under the direction of Colonel F. B. Longe, R.E., Surveyor-General of India. Pp. 127. (Calcutta: Government Printing Office, 1907.) Price 2s. 3d.